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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/797,748	03/09/2004	Roger A. Acey	51302-00002	4003

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PRESTON GATES & ELLIS LLP  
1900 MAIN STREET, SUITE 600  
IRVINE, CA 92614-7319

EXAMINER

WAX, ROBERT A

ART UNIT PAPER NUMBER

1653

DATE MAILED: 04/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/797,748	Applicant(s) ACEY ET AL.	
	Examiner Robert A. Wax	Art Unit 1653	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 28 January 2005.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 26-59 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 26-59 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>09132004</u> . | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Election/Restrictions***

1. Applicant's election with traverse of claims 26-46 (Original Group II) in the reply filed on January 28, 2005 is acknowledged. The traversal is on the ground(s) that no undue search and examination burden exists between the device as now claimed and the processes of using the device. This is found persuasive and the restriction requirement is hereby withdrawn. Thus, claims 26-59 are under examination.

***Priority***

2. Applicants have not complied with one or more conditions for receiving the benefit of an earlier filing date under 35 U.S.C. 120 as follows:

In the paper filed March 9, 2004, styled as A.PE in IFW, and entitled DIVISIONAL APPLICATION UNDER 37 CFR 1.53(B), the claim as a divisional of 09/948,495, filed September 06, 2001, is correct. However, further priority is claimed to 09/636,057, filed August 10, 2000, which claims the benefit of U.S. provisional application No. 60/148,526, filed August 12, 1999. Applicants are not entitled to claim priority to 09/636,057 because that application was filed by a different inventive entity and concerns vaccines for HIV, not metal recovery as disclosed and claimed herein. Deletion of the incorrect claim for priority is required. The effective filing date of this application is therefore September 06, 2001.

***Information Disclosure Statement***

3. The information disclosure statement filed September 13, 2004 has been considered. Please see the attached initialed PTO-1449.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 26-59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al. (Biotechnol. Prog. (1998), 14, 5, 667-71) in view of Brook et al. and Summers et al.

Chen et al. teach removal of mercury from contaminated water by use of *E. coli* cells engineered to express metallothionein immobilized on a cross-flow membrane bioreactor. They do not teach metallothionein from *Artemia*, nor do they teach the use of purified protein immobilized on a support.

Brook et al. teach purification of metallothionein from *Artemia*. They do not teach use of the metallothionein in metal recovery devices or processes.

Summers et al. teach metal binding proteins called chelons and their production. Attention is directed to column 2, lines 63-65, which states, "or the chelon proteins can

be immobilized onto a solid support for use in removal of heavy metal ions from a contaminated aqueous medium." A few lines above that the patent states that the chelons may be within cells or on the surfaces of cells.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to immobilize purified metallothionein in the device of Chen et al. instead of intact cells with the expectation that metals would be removed from aqueous media. This expectation is provided by Summers et al., who teach the equivalence of intracellular and extracellular metal binding protein for use in removing heavy metals from water. One of ordinary skill in the art would expect any metallothionein to function in an equivalent manner, thus, use of *Artemia* metallothionein would have been obvious to said person of ordinary skill. With regard to the claims that recite specific SEQ ID numbers, it is apparent that the sequence is an inherent characteristic of the protein taught by Brook et al. and imparts no patentable distinction.

### ***Conclusion***

6. No claim is allowed.

7. Examiner provides the following observations on the claim language; applicants may wish to amend the claims accordingly. Claim 33 states, "at least one MT proteins", the last word should be "protein" (appears twice); claims 37 and 46 recite, "said metal binds to said at least one MT protein and are", the last word should be "is"; claims 42-45

refer to the "membrane" according to claim 41 but claim 41 is directed to a "device"; the genus name *Artemia* should be italicized in accordance with art-accepted practice.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert A. Wax whose telephone number is (571) 272-0623. The examiner can normally be reached on Monday through Friday, between 9:00 AM and 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jon P. Weber can be reached on (571) 272-0925. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Robert A. Wax  
Primary Examiner  
Art Unit 1653

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